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Water Quality Protection

The Coastal Act requires the protection and enhancement of marine and coastal water quality. In the last twenty-five years experts have identified nonpoint source (NPS) polluted runoff as the leading cause of water pollution both at the coast and inland. The federal government has responded with mandates to States under the Clean Water and Coastal Zone Management Acts to address the issue. In California, the Coastal Commission and the State Water Quality Control Board have developed a joint nonpoint source pollution control program that provides a single unified, coordinated statewide approach to dealing with NPS pollution. A total of 28 state agencies are working collaboratively through the Interagency Coordinating Committee to implement the NPS Program Plan.

Review the principal Coastal Act policies concerning Marine Resources and Water Quality at Sections 30230 through 30236. These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf.

Given the widespread nature of nonpoint source pollution, managing land use on a watershed basis is critical. In the coastal zone, LCPs are a key mechanism for achieving coastal water resource protection. In conjunction with the State's Stormwater and Total Maximum Daily Load (TMDL) Programs, which are administered by the State and Regional Water Quality Control Boards, LCPs can provide the planning and regulatory framework for addressing NPS water quality impacts. LCPs should include policies, ordinances, and programs that establish Best Management Practices (BMPs) for new development both during construction and for the life of a project. They should also incorporate appropriate aspects of local or regional stormwater permits, statewide nonpoint source policies and TMDL requirements.

➢ *What should an updated water quality component include?*

It is important that LCPs reflect the many advances in water quality planning and regulation including:

- Identify and update the mapping of watersheds in your jurisdiction to support watershed assessment and planning.
- Identify the land uses in the watershed and their relative impacts on coastal water resources.
- Identify land areas that support maintenance of the hydrologic cycle (e.g. open space where rainfall can infiltrate or drain slowly to surface waters).
- Incorporate evaluation of potential pollutant sources and changes to local hydrology.

- Update Land Use designations and development standards to reflect watershed management and protection of water quality, including for example: designation of conservation areas and buffers to protect riparian vegetation and wetland areas, and land use designations that prevent long term or cumulative adverse impacts on water quality from non-sewered development.
- Update LCP policies to ensure implementation of appropriate polluted runoff management measures as found in the California Nonpoint Source Encyclopedia.
- Implement Best Management Practices through revisions to policies and ordinances on Grading, Drainage and Erosion Control, Landscaping Requirements and Post-Construction water quality control requirements.
- Integrate NDPES permit, TMDLs and other requirements of the State and Regional Water Resources Control Boards into provisions of the LCP.

♦ The Updated LCP Should Also Provide:

- Guidance on review of permit applications for potential impacts on coastal water quality, including approval from public works staff that the new development will not adversely impact stormwater quality.
- Guidance on incorporation of appropriate Best Management Practices (BMPs) in new or expanding development. Examples can be found in the Stormwater BMP Handbooks.
- Requirements for Treatment Control BMPs for significant development that comply with applicable water quality permits (e.g., municipal stormwater permits) and that will address potential adverse impacts of development.
- Requirements that significant development include a plan, certified by an appropriate licensed professional, that describes how Site Design, Source Control and Treatment Control BMPs will be used to mitigate adverse impacts of a development.
- Identification of the size of storm that will dictate the design of BMPs (typically the "85th percentile storm event").

➢ *What are some examples of water quality policies?*

♦ General Policies

- Minimize Introduction of Pollutants

  Design and manage development to minimize the introduction of pollutants into coastal waters (including the ocean, estuaries, wetlands, rivers, streams and lakes) to the maximum extent practicable.

- Minimize Increases in Peak Runoff Rate

  Design and manage development to minimize increases in peak runoff rate, to avoid detrimental water quality impacts caused by excessive erosion or sedimentation.

- Protect Water Quality and Restore Impaired Waters

  Promote both the protection of unimpaired water quality and the restoration of impaired waters.

♦ Site Design and Source Control Policies

- Incorporate Effective Site Design and Source Control BMPs

  Include effective site design and source control Best Management Practices (BMPs) in all developments, where feasible.

- Apply and Maintain Source Control BMPs

  Require the property owner, homeowners' association, or local government, as applicable, to apply and maintain source control BMPs throughout the life of the development.

- Preserve Functions of Natural Drainage Systems

  Site and design development to preserve the infiltration, purification, and retention functions of natural drainage systems that exist on the site.

- Minimize Impervious Surfaces

  Minimize impervious surfaces in new development, especially directly connected impervious areas, and where feasible, increase the area of pervious surfaces in redevelopment.

- Infiltrate Runoff

  Retain or infiltrate dry weather runoff and runoff from the design storm on the development site, so that the impacts of new or redeveloped impervious surfaces are avoided or minimized. Preserve natural hydrologic conditions to the maximum extent practicable. Alternative management practices may be substituted where it can be shown that infiltration BMPs may result in adverse impacts (e.g., significantly increased risk of slope failure or impacts to an unconfined aquifer).

- Engage in Water Quality Public Education and Outreach

  Encourage and support public outreach and education about the water quality impacts of development and other land uses.

♦ Construction Pollution Control Policies

- Minimize Polluted Runoff from Construction

Minimize erosion, sedimentation, and other polluted runoff from development's construction-related activities, to the maximum extent practicable.

- Minimize Land Disturbance During Construction

  Minimize land disturbance during construction (e.g., clearing, grading, and cut-and-fill), especially in erosive areas (including steep slopes, unstable areas, and erosive soils), to avoid increased erosion or sedimentation. Incorporate soil stabilization BMPs on disturbed areas as soon as feasible.

♦ Treatment Control Policies

- Incorporate Treatment Control BMPs Where Necessary

  Require structural treatment BMPs along with site design and source control measures when the combination of site design and source control BMPs is not sufficient to protect water quality.

- Size Treatment Controls Appropriately

  Where structural BMPs are required for post-construction treatment of runoff, structural BMPs (or "suites of BMPs") shall be designed to treat, infiltrate, or filter the amount of stormwater runoff produced by all storms up to and including the 85th percentile, 24-hour storm event for volume-based BMPs, and/or the 85th percentile, 1-hour storm event (with an appropriate safety factor of 2 or greater) for flow-based BMPs.

- Maintain Structural Treatment Control BMPs

  Require the inspection, cleaning, and repair of structural treatment control BMPs as necessary, to ensure proper functioning for the life of the development.

➢ *Where can I read some examples of water quality policies and LCP updates?*

- California Nonpoint Source Encyclopedia at www.swrcb.ca.gov/nps/encyclopedia.html.
- The California Association of Stormwater Agency's Stormwater BMP Handbooks at www.cabmphandbooks.com.
- The Commission's Water Quality Program website at http://www.coastal.ca.gov/nps/npsndx.html.

Here are some updated LCP Water Quality Components:

- City Of Malibu LUP – see the water quality sections in Chapter 3.C.4 and Chapter 5.C.9 at http://www.coastal.ca.gov/ventura/malibu-lup-final.pdf.
- City of Malibu Zoning Ordinance provisions in Chapters 17 and 18 at

http://www.coastal.ca.gov/ventura/malibu-lip-final.pdf.

- City of Newport Beach LCP water quality policies at: http://www.city.newport-beach.ca.us/Pln/LCP/Internet%20PDFs/CLUP%20Part%204.pdf.
- The City of Laguna Beach Topic 4 of Conservation /Open Space Element at http://www.lagunabeachcity.net/development/informationguides/pdf/plans/Open%20Space-Conservation.pdf.
- Title 16 of the City of Laguna Beach Code: at http://bpc.iserver.net/codes/lagunab/_DATA/TITLE16/Chapter_16_01__WATER_QUALITY_C.html.

➢ *What are some current issues in water quality management?*

The following information should be considered in updating policies for protection of coastal water quality.

♦ Low Impact Development

Low Impact Development (LID) is intended to benefit water supply and contributes to water quality protection. Unlike traditional stormwater management, which collects and conveys storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID uses site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology through techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID has proven effective in other parts of the country. More information can be found in the following fact sheet: http://www.coastal.ca.gov/nps/lid-factsheet.pdf.

♦ Effects of Impervious Surfaces on the Hydrologic Cycle

With natural groundcover, 25% of rain infiltrates into the ground and only 10% ends up as runoff (65% is shallow surface evapotranspiration-meaning that some travels to the aquifer, some stays in the shallow ground and flows downhill to a wet feature like a creek or seep, and some evaporates over the following season). As imperviousness increases, less water infiltrates and more runs off. In highly urbanized areas, over one-half of all rain becomes surface runoff, and deep infiltration is only a fraction of what it was naturally. The increased surface runoff requires more infrastructure to minimize flooding. Natural waterways end up being used as drainage channels, and are frequently lined with rocks or concrete to move water more quickly and prevent erosion. In addition, as deep infiltration decreases, the water table drops, reducing groundwater for wetlands, riparian vegetation, wells, and other uses.

More information can be found in the following fact sheet: http://www.coastal.ca.gov/nps/watercyclefacts.pdf.

♦ Runoff Controls In Landscape Plans

Recent legislation (AB 1881 effective January 1, 2007) requires the Department of Water Resources to update, and local agencies to adopt, the model local water efficient landscape ordinance, including restrictions on overspray and runoff. Your LCP should be updated to address these new requirements. For more information see: http://www.leginfo.ca.gov/pub/bill/asm/ab_1851-1900/ab_1881_bill_20060928_chaptered.html.